Claims

601274

[c1]

1. A method for supplying reductant to a catalyst coupled to an internal combustion engine operating at a lean/air fuel ratio, comprising the steps of: indicating a quantity of reductant stored within the catalyst; and while said quantity is less than a first predetermined quantity, supply reductant to the catalyst.

[c2] 170**)**

2. The method of <u>claim 1</u>, wherein said step of supplying reductant to the catalyst is performed under predetermined conditions.

[c3]

3. The method of <u>claim 2</u>, wherein an operating condition of the engine is selected to provide said predetermined conditions.

[c4]

4. The method of claim 2, wherein said predetermined conditions comprise a temperature of the catalyst greater than a predetermined temperature.

[c5]

5. The method of claim 4, wherein said predetermined temperature is approximately 300 degrees Celsius.

[c6]

6. The method of clasm 2, wherein said predetermined conditions comprise a NOx concentration of an exhaust gas stream discharged from the engine less than a predetermined concentration.

[c7]

7. The method of $\frac{1}{2}$, wherein said first predetermined quantity is an insignificant amount of reductant stored within the catalyst.

[c8]

8. The method of claim 1, further comprising the step that when said quantity of reductant stored within the catalyst is greater than a second predetermined quantity, substantially discontinue said supplying step.

[c9]

9. The method of <u>claim 8</u>, wherein said second predetermined quantity is based on an indication of a reductant storage capacity of the catalyst.

[c10]

10. The method of <u>claim 2</u>, wherein said predetermined conditions cause reductant to absorb onto active sites within the catalyst.

[c11]

1/1 . The method of <u>claim 10</u> , wherein said active sites are comprised of copper

oxide.

[c12]

12. The method of <u>claim 10</u>, wherein said first predetermined quantity is an insignificant amount of reductant stored on active sites within the catalyst.

[c13]

John Ja

13. The method of <u>claim 12</u>, further comprising the step of discontinuing said supplying step when said quantity of reductant stored on active sites within the catalyst is greater than a second predetermined quantity.

[c14]

14. The method of <u>claim 10</u>, further comprising the step of discontinuing said supplying step when said quantity of reductant stored on active sites within the catalyst is greater than a second predetermined quantity.

[c15]

15. The method of claim 14, wherein said second predetermined quantity is based on an indication of a number of active sites within the catalyst.

[c16]

16. A system for increasing the conversion of NOx in a catalyst receiving exhaust gases from a combustion chamber operating at an air/fuel ratio lean of stoichiometric, comprising:
an injector supplying reductant to the exhaust gases, said injector is located upstream of the catalyst; and
an electronic control unit operably connected to said injector and the combustion chamber which periodically creates a first set of operating

conditions of said combustion chamber and actuates said injector during said

[c17]

17. The system of claim 16, further comprising an exhaust gas sensor downstream of the catalyst.

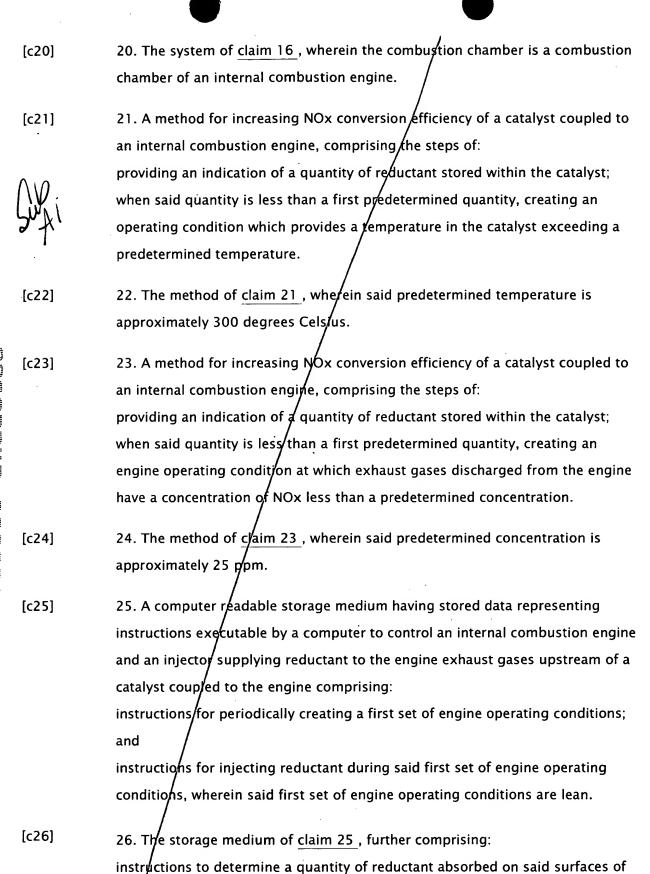
first set of operating conditions.

[c18]

18. The system of claim 16, wherein said exhaust gas sensor is operably connected to said electronic control unit and said electronic control unit bases said actuation of said injector on a signal from said exhaust gas sensor.

[c19]

19. The system of <u>claim 16</u>, wherein said first set of operating conditions comprise reating a temperature in the catalyst greater than about 300 degrees Celsius.



instructions for performing said creation of said first set of engine operating

the catalyst; and

Page 18 of 29



conditions, when said quantity of reductant within said catalyst is less than a predetermined quantity of reductant.